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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,514	10/14/2005	Maki Oshima	HOK-0288	7467
74384	7590	03/26/2008		
Cheng Law Group, PLLC 1100 17th Street, N.W. Suite 503 Washington, DC 20036			EXAMINER ARNBERG, MEGAN C	
			ART UNIT	PAPER NUMBER
			1796	
			MAIL DATE	DELIVERY MODE
			03/26/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,514	Applicant(s) OSHIMA ET AL.	
	Examiner MEGAN ARNBERG	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (U.S. Pat. 6,296,940) in view of Oda et al. (JP 2002069750).

Regarding claim 1: Ito et al. teaches a composition comprising an epoxy resin, a curing agent, specifically a novolac resin (col. 2 lines 62-64), and a phosphorus atom containing polyester obtained by condensing a phosphorus compound containing a P-H linkage with an alcoholic hydroxyl group (abstract). The amount of phosphorus content in the resin composition is 0.3% -8% by weight (col. 3 lines 50-52), which overlaps the claimed range. Ito et al. further teaches the phosphorus containing reactant shown in fig. 1 (col. 3, line 12):

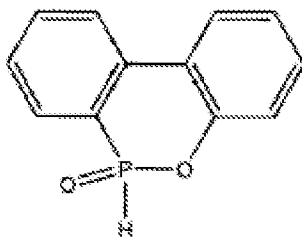


fig. 1
9,10-dihydro-9-oxa-10-phosphaphenanthrene-10-oxide

Ito et al. does not teach the specific phosphorus compound cited, fig. 2, cited in the instant.

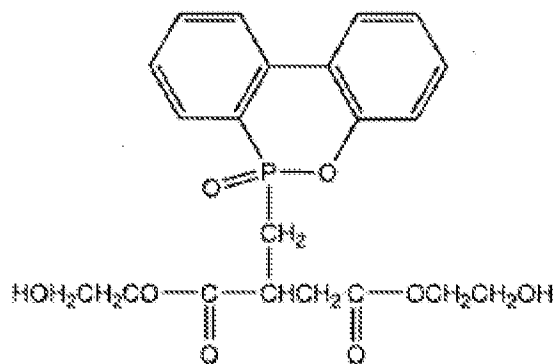


fig. 2

However, Oda et al. teaches the structure shown in fig. 2 as being an excellent fire retarding compound (claim 2, formula 2). Ito et al. and Oda et al. are analogous art since they are both from the same field of endeavor, namely fire retardant compounds and compositions. One of ordinary skill in the art, at the time the invention was made would have been motivated to combine the teachings of Oda et al. with those of Ito et al. and would have been motivated to do so for such desirable properties as to obtain improved structural stability.

Also not disclosed in Ito et al. is the hydroxyl equivalent of the novolac resin is in a range of 0.8-1.2 with respect to the epoxy resin. However, the experimental modification of this prior art in order to ascertain optimum operating conditions fails to render applicants' claims patentable in the absence of unexpected results. See *In re Aller*, 105 USPQ 233 and MPEP 2144.05. At the time of the invention a person having ordinary skill in the art would have found it obvious to optimize the amount of hydroxyl groups in the crosslinking agent to the amount of epoxy groups in the resin and would have been motivated to do so, as evidenced by Ito et al., because either residual epoxy groups or hydroxyl groups is not preferable because it invites reduction in moisture

resistance, moldability and electrical properties after curing (col. 3 lines 43-49). By having a substantially equal amount of hydroxyl and epoxy functionality, residual amounts of unreacted groups are reduced. A prima facie case of obviousness may be rebutted, however, where the results of the optimizing variable, which is known to be result-effective, are unexpectedly good. See *In re Boesch and Slaney*, 205 USPQ 215.

Regarding claims 3 and 4: Ito et al. teaches an epoxy resin containing no halogens (col. 2 lines 25-30) and can be a biphenyl epoxy resin with an epoxy equivalent of 195 g/eq (example 1), which overlaps the claimed range.

Regarding claims 5-8: Ito et al. teaches a prepreg by varnishing the composition, dissolved in a solvent, onto a substrate, dried to form a metal clad, laminated sheet which is placed in a printed circuit board (col. 4 lines 21-28).

Response to Arguments

Applicant's arguments filed January 2, 2008 have been fully considered but they are not persuasive, because:

A) Applicant's arguments that the cited references fail to teach or suggest the superior effects of the present invention are not persuasive. All the limitations of the instant claims have been met, as set forth above. Therefore, implicitly the composition as set forth in the rejection above would have the properties of the instant claims. General allegation that the properties of the instant invention are unexpected and superior without a showing of specific evidence to that point is not persuasive.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEGAN ARNBERG whose telephone number is (571)270-3292. The examiner can normally be reached on Monday - Friday 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James J. Seidleck/

Supervisory Patent Examiner, Art Unit 1796

/M. A./
Examiner, Art Unit 1796